

General instructions: Experimental Examination (20 points)

Failure to comply with any of the following conditions may result in disqualification

July 19, 2025

The experimental examination lasts for 5 hours and is worth a total of 20 points.

The beginning and end of the examination will be indicated by an announcement, as well as every hour indicating the elapsed time, and thirty, fifteen and five minutes before the end of the examination.

Do not open the envelopes nor boxes until instructed to do so.

The following items are provided for your use on the table: (1) a ballpoint pen, (2) a mechanical pencil, (3) an eraser, (4) a graduated ruler, (5) a compass, and (6) a scientific calculator.

During the exam

- Use the ballpoint pen provided. If you use the mechanical pencil to draft your notes, figures, tables and graphs, you must trace the outlines of the final version with the ballpoint pen.
- Use the dedicated sheets labeled **A** for your final answers. Fill in appropriate sections with your answers and necessary observations. Draw graphs as required. Cross out anything you do not want marked.
- Blank working sheets labeled **W** are provided for drafting. Use the designated ones. Cross out any unneeded answers and rough work that do not need to be graded. Use only the front face of each sheet and keep the margin outside the border clean.
- Additional working sheets labeled **Z** are available upon request. Raise the "Help" flag and let the Invigilator know.
- Keep your answers concise and legible. Use equations, logical operators, symbols, and sketches that best convey your thoughts. Avoid being lengthy and wordy as the markers may not be multi-lingual.
- Uncertainty quantification is not required unless otherwise specified. On the other hand, you may decide how many data points or measurement runs are needed unless instructed otherwise.
- Do not leave your booth without permission. If you need a washroom break or any other assistance, raise the flag(s) marked "Toilet", "Water", or "Help".

At the end of the exam

- Stop writing immediately when the end of the exam is announced.
- Put all the sheets in the windowed envelope. Organize them faceup in the following order : cover sheet on top, General Instructions, question sheets (**Q**), answer sheets (**A**), working sheets (**W**), and additional working sheets (**Z**), if any. Arrange them according to their page numbers. In the final check, make sure that your ID, name, and seat number on the cover sheet are visible through the window.
- Your Invigilator will let you know when you can leave. **Do not take anything with you.** Time permitting, put everything back as it was. Your cooperation would be greatly appreciated.

Specific instructions

Throughout the examination, always refer to the quantities indicated in the instructions, unless otherwise stated. When series of measurements are taken, the quantities measured should be explicitly indicated in the tables, as well as the quantities plotted if different. All graphs must clearly indicate the different quantities involved. In all cases, the units of all quantities used should be given.